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Public summary of opinion on orphan designation

Melatonin for the treatment of neonatal encephalopathy

On 21 March 2018, orphan designation (EU/3/18/1996) was granted by the European Commission to Therapicon Srl, Italy, for melatonin for the treatment of neonatal encephalopathy.

What is neonatal encephalopathy?

Neonatal encephalopathy refers to brain damage that occurs around the time of birth in babies who are not premature. Symptoms include reduced level of consciousness, seizures (fits), difficulty breathing, low muscle tone and poor reflexes. It is often caused by low levels of oxygen in the blood.

Neonatal encephalopathy is a long-term debilitating disease due to its effects on mental and physical development, and can often be life-threatening in the most severe cases.

What is the estimated number of patients affected by the condition?

At the time of designation, neonatal encephalopathy affected less than 1 in 10,000 people in the European Union (EU). This was equivalent to a total of fewer than 52,000 people*, and is below the ceiling for orphan designation, which is 5 people in 10,000. This is based on the information provided by the sponsor and the knowledge of the Committee for Orphan Medicinal Products (COMP).

What treatments are available?

At the time of designation, there were no satisfactory treatments authorised in the EU for neonatal encephalopathy. Babies with neonatal encephalopathy received therapeutic hypothermia, whereby the baby's body is cooled down to a body temperature lower than normal (hypothermia) to reduce extent of damage.

How is this medicine expected to work?

Melatonin is a naturally occurring hormone. The exact way it works in neonatal encephalopathy is not clear. It is thought that melatonin can help reduce brain damage in several ways through its effects in reducing inflammation and cell death and in countering the effects of toxic molecules in the brain.

*Disclaimer: For the purpose of the designation, the number of patients affected by the condition is estimated and assessed on the basis of data from the European Union (EU 28), Norway, Iceland and Liechtenstein. This represents a population of 517,400,000 (Eurostat 2018).

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What is the stage of development of this medicine?

The effects of melatonin have been evaluated in experimental models.

Melatonin has been authorised in the EU for short-term treatment of insomnia.

At the time of submission of the application for orphan designation, no clinical trials with melatonin in patients with neonatal encephalopathy had been started.

At the time of submission, melatonin was not authorised anywhere in the EU for neonatal encephalopathy. Orphan designation of melatonin had been granted in the United States for treatment of neonatal hypoxic ischemic encephalopathy.

In accordance with Regulation (EC) No 141/2000 of 16 December 1999, the COMP adopted a positive opinion on 15 February 2018 recommending the granting of this designation.

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Opinions on orphan medicinal product designations are based on the following three criteria:

- the seriousness of the condition;
- the existence of alternative methods of diagnosis, prevention or treatment;
- either the rarity of the condition (affecting not more than 5 in 10,000 people in the EU) or insufficient returns on investment.

Designated orphan medicinal products are products that are still under investigation and are considered for orphan designation on the basis of potential activity. An orphan designation is not a marketing authorisation. As a consequence, demonstration of quality, safety and efficacy is necessary before a product can be granted a marketing authorisation.

For more information

Sponsor's contact details:

Contact details of the current sponsor for this orphan designation can be found on EMA website, on the medicine's rare disease designations page.

For contact details of patients' organisations whose activities are targeted at rare diseases see:

- Orphanet, a database containing information on rare diseases, which includes a directory of patients' organisations registered in Europe;
- European Organisation for Rare Diseases (EURORDIS), a non-governmental alliance of patient organisations and individuals active in the field of rare diseases.

Translations of the active ingredient and indication in all official EU languages[1], Norwegian and Icelandic

Language	Active ingredient	Indication
English	Melatonin	Treatment of neonatal encephalopathy
Bulgarian	Мелатонин	Лечение на неонатална енцефалопатия
Croatian	Melatonin	Liječenje neonatalne encefalopatije
Czech	Melatonin	Léčba neonatální encefalopatie
Danish	Melatonin	Behandling af neonatal encephalopati
Dutch	Melatonine	Behandeling van neonatale encephalopathie
Estonian	Melatoniin	Neonataalse entsefalopaatia ravi
Finnish	Melatoniini	Neonataalisen enkefalopatian hoito
French	Mélatonine	Traitement de l'encéphalopathie néonatale
German	Melatonin	Behandlung der neonatalen Enzephalopathie
Greek	Μελατονίνη	Θεραπεία της νεογνικής εγκεφαλοπάθειας
Hungarian	Melatonin	Újszülöttkori enkefalopátia kezelésére
Italian	Melatonina	Trattemento dell'encefalopatia neonatale
Latvian	Melatonīns	Neonatālas encefalopātijas ārstēšana
Lithuanian	Melatoninas	Naujagimių encefalopatijos gydymas
Maltese	Melatonina	Kura tal-enċefalopatija fi trabi tat-twelid
Polish	Melatonina	Leczenie encefalopatii noworodka
Portuguese	Melatonina	Tratamento da encefalopatia neonatal
Romanian	Melatonină	Tratamentul encefalopatiei neonatale
Slovak	Melatonín	Liečba neonatálnej encefalopatie
Slovenian	Melatonin	Zdravljenje neonatalne encefalopatije
Spanish	Melatonina	Tratamiento de la encefalopatia neonatal
Swedish	Melatonin	Behandling av neonatal encefalit
Norwegian	Melatonin	Behandling av neonatal encefalopati
Icelandic	Melatónín	Meðferð nýbura heilakvilla

[1] At the time of designation